IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

HUAWEI TECHNOLOGIES CO. LTD., Plaintiff, v. VERIZON COMMUNICATIONS, INC., VERIZON BUSINESS NETWORK SERVICES, INC., VERIZON ENTERPRISE SOLUTIONS, LLC, CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, INC., VERIZON DATA SERVICES LLC, VERIZON BUSINESS GLOBAL LLC, AND VERIZON SERVICES CORP. Defendants.	C.A. 2:20-cv-00030
VERIZON BUSINESS NETWORK SERVICES, INC., CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, VERIZON DATA SERVICES LLC, VERIZON BUSINESS GLOBAL LLC, VERIZON SERVICES CORP., AND VERIZON PATENT AND LICENSING INC. Counterclaim-Plaintiffs, v. HUAWEI TECHNOLOGIES CO. LTD., HUAWEI TECHNOLOGIES USA, INC., AND FUTUREWEI TECHNOLOGIES INC. Counterclaim-Defendants.	

HUAWEI'S OPENING CLAIM CONSTRUCTION BRIEF REGARDING THE HUAWEI ASSERTED PATENTS

TABLE OF CONTENTS

I. '433 PATENT ANALYSIS 1

A. Data Blocks Containing Data Only / Data Block Group Containing Data Blocks Only *(Claims 1, 6, 10, 14)* 1

B. Control Block Buffer / Data Block Buffer *(Claims 1,6)* 2

C. Claim 1 Method Steps 3

II. '151 PATENT ANALYSIS 4

A. Mapping the single low-rate traffic signal to the single low-rate traffic OPU is performed using a General Framing Procedure (GFP) or other adaptation protocols 4

B. Low-rate traffic *(claims 1-13)* 5

C. Transmitting the ODUk via the OTN /Transmitting a low-rate traffic signal in an Optical Transport Network (OTN) *(Claims 1, 7, 12)* 5

D. Rate Rank *(claims 1, 6)* 6

E. Adapted To / Configured To *(Claims 7 – 13)* 7

III. '982 PATENT ANALYSIS 9

A. In Groups of M Bytes *(Claims 1, 5, 9, 12)* 9

B. Lower Order Optical Data Unit (LO ODU) Signal / Higher Order Optical Channel Payload Unit (HO OPU) Signal *(Claims 1, 5, 9, 10, 12, 13)* 10

C. [Encapsulating / Encapsulate] Overhead Information to an Overhead Area of the ODTU Signal *(Claims 1, 5)* 11

D. Time Slot *(Claim 1)* 11

E. Tributary Slot *(claims 4, 5, 8, 9, 11, 12, 14)* 13

F. Optical Channel Data Tributary Unit (ODTU) Signal *(Claims 1, 4, 5, 8 – 14)* 13

IV. '236 PATENT ANALYSIS 14

A. Client signal byte number Cn *(claims 1-15)* 14

B. If the Cn transported in the OTN frame needs to be [increased / decreased] / the Cn transported in the OTN frame doesn't need to be increased or decreased *(claims 1-3, 7-9, 15)* 15

C. Revers[e/ing] … values of [a/the] [first / second] series of bit positions / values of a [first / second] series of bit positions…are reversed / values of a first series or a second series of bit positions … aren't reversed *(claims 1-12, 15)* 16

D. [a / the] first series of bit positions / [a / the] second series of bit positions *(claims 1-12, 15)* 16

E. [whether] the [client signal byte number] Cn exceeds [a / the] range [of client signal byte number] *(claims 2, 3, 5, 8, 9, 11, 13, 14)* 17

F. identifying the Cn is normal [in a first area] *(claims 3, 9)* 18

G. generat[e/ing] a client signal byte number Cn transported in an OTN frame period according to [a/the] client signal clock and a system clock / computing the Cn transported in the OTN frame period according to a client signal clock and a system clock *(claims 1-3, 7-9, 13-15)* 19

V. '505 PATENT ANALYSIS 20

A. Optical Channel Data Tributary Unit (ODTU) [frame] / ODTU [frame] *(claims 1-4)* 20

B. determining a quantity of n-bit data units of the client signal based on a clock of the client signal and a local clock *(claims 1-4)* 21

C. n-bit data units / n indicating the number of the multiple OPUk TSs *(claims 2, 3)* 21

D. Optical Channel Payload Unit-k Tributary Slot (OPUk TS) *(claims 1-4)* 22

E. mapping each byte of the second ODTU frame to at least one Optical Channel Payload Unit-k Tributary Slot (OPUk TS) *(claims 1-4)* 23

VI. '253 PATENT ANALYSIS 23

A. Judging Terms – "judging . . . whether the identifier contained in the fault alarm message is different from a fault identifier record stored in the second node" *(Claims 1, 4, 6, 9, 14)* 23

B. Configured To *(Claims 4, 6, 8, 14)* 25

C. Null *(Claim 12)* 25

VII. '485 PATENT ANALYSIS 26

A. A Link Where a Normally Blocked Port Locates *(Claims 8, 10)*.....26

B. The Non-Clearing Indication Indicates That a Forwarding Table Is Not Desired To Be Cleared By The Other Ring Nodes *(Claim 8)* 27

C. Automatic Protection Switching (APS) Packet In Ethernet Protection Switching Mechanism *(Claim 8)* 27

VIII. ALLEGED SECTION 112(6) TERMS 27

TABLE OF AUTHORITIES

Cases

Altiris, Inc. v. Symantec Corp.
318 F.3d 1363 (Fed. Cir. 2003)..... 3

Altrium Medical Corp. V. Davol, Inc.
Case IPR2013-00186, 2013 WL 8595525 (PTAB Aug. 31, 2013) 7

Apple Inc. v. Motorola, Inc.
757 F.3d 1286 (Fed. Cir. 2014)..... 28

Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.
672 F.3d 1335 (Fed.Cir.2012)..... 8

Audionics Sys., Inc. v. AAMP of Fla., Inc.
No. CV1210763, 2015 WL 11182054 (C.D. Cal. July 10, 2015) 7

Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP
616 F.3d 1249 (Fed. Cir. 2010)..... 15, 19, 20

Berg Tech. v. Foxconn Int'l, Inc.
185 F.3d 884, 1999 WL 96414 (Fed. Cir. Feb. 23, 1999) 7

Canon, Inc. v. TCL Elecs. Holdings Ltd.
No. 2:18-CV-546-JRG, 2020 WL 2098197 (E.D. Tex. May 1, 2020) 28, 29

Golden Bridge Tech., Inc. v. Apple Inc.
758 F.3d 1362 (Fed. Cir. 2014)..... passim

Innogenetics, N.V. v. Abbott Labs.
512 F.3d 1363 (Fed. Cir. 2008)..... 5, 6, 14

Interactive Gift Express, Inc. v. CompuServe Inc.
256 F.3d 1323 (Fed. Cir. 2001)..... 3

Liebel–Flarsheim Co. v. Medrad, Inc.
358 F.3d 898 (Fed. Cir. 2004)..... passim

Linear Tech. Corp. v. Impala Linear Corp.
379 F.3d 1311 (Fed. Cir. 2004)..... 28

Mobile Telecomms. Techs., LLC v. Google Inc.
No. 2:16-CV-2-JRG-RSP, 2016 WL 7338398 (E.D. Tex. Dec. 19, 2016)..... 3

Nautilus, Inc. v. Biosig Instruments, Inc.
572 U.S. 898 (2014) 16, 27

Optis Wireless Tech., LLC v. Apple Inc.
No. 2:19-CV-00066-JRG, 2020 WL 1692968 (E.D. Tex. Apr. 7, 2020) 28, 29

Personalized User Model LLP v. Google Inc.
2012 WL 295048 (D. Del. Jan. 25, 2012) 3

Phoenix Licensing, L.L.C. v. AAA Life Ins. Co.
2015 WL 1813456 (E.D. Tex. Apr. 20, 2015) 15, 16, 19, 23

Radware Ltd. v. A10 Networks, Inc.
No. C-13-02024-RMW, 2014 WL 1572644 (N.D. Cal. Apr. 18, 2014) 8

Retractable Techs., Inc. v. Becton, Dickinson & Co.
653 F.3d 1296 (Fed. Cir. 2011) 2

Samsung Elecs. Am., Inc. v. Prisua Eng'g Corp.
948 F.3d 1342 (Fed. Cir. 2020) 27, 28, 29

ScriptPro LLC v. Innovation Assocs., Inc.
833 F.3d 1336 (Fed. Cir. 2016) 4

SEVEN Networks, LLC v. Apple Inc.
No. 2:19-CV-115-JRG, 2020 WL 1536152 (E.D. Tex. Mar. 31, 2020) 28

Sta–Rite Indus., LLC v. ITT Corp.
682 F.Supp.2d 738 (E.D.Tex.2010) 8

SuperGuide Corp. v. DirecTV Enters., Inc.
358 F.3d 870 (Fed. Cir. 2004) 5, 6, 7

Teleflex, Inc. v. Ficosa North America Corp.
299 F.3d 1313 (Fed. Cir. 2002) 15

Thorner v. Sony Computer Entm't Am. LLC
669 F.3d 1362 (Fed. Cir. 2012) ..... passim

Uniloc USA, Inc. v. Autodesk, Inc.
No. 2:15-CV-1187-JRG-RSP, 2016 WL 3647977 (E.D. Tex. July 7, 2016) 29

Vitronics Corp. v. Conceptronic, Inc.
90 F.3d 1576 (Fed. Cir. 1996) ..... passim

Warsaw Orthopedic, Inc. v. NuVasive, Inc.
778 F.3d 1365 (Fed. Cir. 2015)..... 16

Williamson v. Citrix Online, LLC
792 F.3d 1339 (Fed. Cir. 2015)..... 28

Zeroclick, LLC v. Apple Inc.
891 F.3d 1003 (Fed. Cir. 2018)..... 28, 29

Statutes

35 U.S.C. § 112..... 27, 28, 29, 30

I. '433 PATENT ANALYSIS

A. Data Blocks Containing Data Only / Data Block Group Containing Data Blocks Only *(Claims 1, 6, 10, 14)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	Data blocks containing service data only

The dispute here is whether the Court should limit these terms to referencing "service" data. Verizon fails to justify such a reading. A person of ordinary skill in the art seeking to understand the meaning of this phrase need look no further than the claim language itself. It employs ordinary English terms that can be understood by a POSITA and jurors alike. Indeed, Defendants do not actually seek to define words in this phrase. Rather, they seek to insert the word "service" into the claim language. This is improper. *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012) ("We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.")

The '433 patent contains two references to "service data." It states: "When transmitting service data, a communication system encodes the service data to be transmitted through an encoding scheme adapted for a payload bandwidth." '433 patent at 1:26-1:29. And further: "With the increasing bandwidth requirements caused by the increase in people's demand for Voice, data, multimedia, and other services, the OTN has gradually become a core platform for bearer services of various operators. Transmission of Service data on the OTN using the 10 GE or 40 Gigabit Ethernet (40 GE) standard is currently considered a hot topic." '433 patent at 1:54-1:57. Neither of these statements rises to the level of lexicography or disclaimer. Indeed, these statements appear in the background of the invention section where they explain the inventors' motivation for studying this topic; they do not purport to limit the potential uses of the claimed invention as it is described later in the specification.

Thus, Verizon's proposal would manufacture a non-infringement position allowing it to argue that it does not infringe if it uses the G.709 standard to transmit internal Verizon networking monitoring information in addition to customer service data (e.g., phone calls, customer Internet data, etc.) The intrinsic record cannot sustain such an interpretation.

B. Control Block Buffer / Data Block Buffer *(Claims 1,6)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	Dedicated buffer for only control blocks / dedicated buffer for only pure data

The parties agree that the claims require a control block buffer for storing control blocks and a data block buffer for storing data blocks. This interpretation is supported by the claim language, which provides sufficient explanation of the role of the control block buffer and data block buffer. For example, claim 1 states: "placing the control blocks into a control block buffer as a control block group. . . and placing the data blocks, as a data block group, into a data block buffer." This language is understandable to a jury and a POSITA; no construction is necessary.

Verizon's proposal wrongly requires distinct buffers and that each buffer be used only for control blocks or pure data. Neither the claim language nor the specification support this. The specification does contain some embodiments where at least one buffer is used for data only. *See* '433 patent at 9:24-9:30 ("The control blocks containing the control characters are placed into a control block buffer as a control block group. . . and the data blocks containing data only are placed, as a data block group, into a buffer containing data blocks only.") However, this statement does not purport to define the terms "control block buffer" or "data block buffer," nor otherwise disclaim the full scope of those terms. Indeed, if the term "data block buffer" inherently meant a buffer that stores data blocks only, there would be no need to state that in this embodiment the buffer for the data blocks "contain[s] data blocks only." *See Liebel-Flarsheim*, 358 F.3d at 913 (explaining that "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.").

Moreover, Verizon's proposal is contrary to the general principle that one structure may satisfy multiple claim elements. *See Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1303 (Fed. Cir. 2011) ("The claims and the specifications indicate that the 'needle holder' and 'retainer member' need not be separately molded pieces."); *see, e.g., Mobile Telecomms. Techs., LLC v. Google Inc.*, No. 2:16-CV-2-JRG-RSP, 2016 WL 7338398, at *9

(E.D. Tex. Dec. 19, 2016) (explaining that one device could satisfy separate "transmitter" and "receiver" limitations). There is no reason to rule as a matter of claim construction that certain devices do not infringe because they contain a buffer capable of storing data blocks and control blocks. *See also* Bortz Decl. at ¶¶ 25-26.

C. Claim 1 Method Steps

Huawei's Proposal	Verizon's Proposal
The steps need not occur in the order as recited by the claim	The steps must occur in the order as recited by the claim.

To determine whether steps of a method claim must be performed in a particular order, courts look to whether the claims require, as a matter of logic or grammar, that the steps be performed in the order written; and, if not, then courts look to whether the specification directly or implicitly requires such a construction. *See Interactive Gift Express, Inc. v. CompuServe Inc.*, 256 F.3d 1323 (Fed. Cir. 2001); *see also Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70; *Personalized User Model LLP v. Google Inc.*, 2012 WL 295048, at *28 (D. Del. Jan. 25, 2012) ("If the invention could potentially be performed without going in the specific sequence, then the claim does not require an order of steps.").

As a matter of logic and grammar, these claims do not require that the method steps be performed in order. Claim 1 of the '433 patent requires placing data blocks into a buffer as a data block group and placing control blocks into a buffer as a control block group along with first, second, third, and fourth identifiers. Although the claim mentions control blocks before it mentions data blocks, as a matter of logic and grammar, the claim does not require that the control blocks be buffered before the data blocks. Similarly, although the claim uses numerical terms for the identifiers, as a matter of logic and grammar, these terms merely list the required identifiers, they do not require that the identifiers be set in a particular chronological order. a POSITA would understand that the identifier labeled as "second" could be set before the identifier labeled "first." *Id.* For example, the first identifier identifies a control block group. Just as a matter of logic, this identifier could be set, and then control blocks placed into a buffer, or control blocks could be placed into a buffer and then a first identifier set. Similarly, the

remaining identifiers could be set in some order, or set in parallel. Accordingly, there is no basis for the Court to read a required order into the claim.

II. '151 PATENT ANALYSIS

A. mapping the single low-rate traffic signal to the single low-rate traffic OPU is performed using a General Framing Procedure (GFP) or other adaptation protocols

Huawei's Proposal	Verizon's Proposal
No construction necessary.	the mapping the single low-rate traffic signal to the single low-rate traffic OPU is performed using a General Framing Procedure (GFP), where the adaption protocol is either GFP-T or GFP-F Alternatively, indefinite.

The dispute with respect to this term is whether the Court should limit the claims to the Generic Framing Procedure (GFP), despite claim language that is directed towards a broader range of embodiments. The Court should reject Verizon's efforts to so narrow the claims.

The claim language is clear in stating that the mapping may be performed using "a" Generic Framing Procedure. Thus, the claim covers any of the variants of GFP and there is no need to specifically recite the variants GFP-F and GFP-T in a construction. By further stating that the mapping may be accomplished using an "other adaptation protocol," the claim indicates that it also covers non-GFP protocols. Because this language can be understood by a POSITA and the jury, it is neither indefinite nor in need of construction.

This is confirmed by the specification. It explains that GFP-T and GFP-F are the two different types of GFP used for different types of traffic data. '151 patent at 6:22-32. The patent also explains that the invention *does not* require the use of these two GFP variants: '151 patent at 11:16-19 ("the above GFP encapsulating and mapping method may be that of other feasible adaptation protocols encapsulating formats, and the corresponding GFP mapping module may be replaced by the mapping modules of other adaptation protocols"). While the patent recognizes that there must be some mapping of the low-rate traffic signal to the low-rate traffic OPU, GFP (including GFP-F or GFP-T) is just one way to accomplish that mapping. Accordingly, the Court should not limit the claims to those two embodiments. *See ScriptPro LLC v. Innovation Assocs., Inc.*, 833 F.3d 1336, 1341 (Fed. Cir. 2016) ("a specification's focus on one particular

embodiment or purpose cannot limit the described invention where that specification expressly contemplates other embodiments or purposes"); *see also Liebel-Flarsheim*, 358 F.3d at 913 (explaining that "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.").

Verizon's proposal would improperly re-write the claims to exclude more recent versions of the G.709 standard, including those that use Generic Mapping Protocol (GMP) and Idle Mapping Procedure (IMP) as alternatives to GFP. *See* Bortz Decl. at 32. The Federal Circuit has warned against precisely this type of error, explaining: "Our case law allows for after-arising technology to be captured within the literal scope of valid claims that are drafted broadly enough." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1371–72 (Fed. Cir. 2008); *see, e.g., SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 878–80 (Fed. Cir. 2004) (finding that the claim limitation "regularly received television signal" is broad enough to encompass digital signals even though no televisions that could receive digital signals existed as of the filing date). Because the '151 claims do not require GFP, and, in fact, expressly encompass other protocols, the Court should not limit the claims to requiring the use of GFP.

B. Low-rate traffic *(claims 1-13)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary.	traffic rates less than 2.5 Gbps

This term uses ordinary English words easily understood by a POSITA and the jury. Thus, no construction is necessary. Moreover, the claim states: "the single low-rate traffic signal is a Gigabit Ethernet (GE) signal or a Fiber Connection (FC) signal with a rate of 1.06 Gbit/s." Thus, there is no need to define this term to refer to a rate of less than 2.5 Gbps.

C. Transmitting the ODUk via the OTN /Transmitting a low-rate traffic signal in an Optical Transport Network (OTN) *(Claims 1, 7, 12)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary. In the alternative: transmitting the ODUk in an Optical Transport Network	transmitting the ODUk within an Optical Transport Network (OTN)

These terms use ordinary English words easily understood by a POSITA and the jury. Verizon has not explained how its proposed construction alters the scope of these terms. Accordingly, no construction is necessary.[1]

D. Rate Rank[2] *(claims 1, 6)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	the k value of ODUk or OPUk, where k equals 0, 1, 2, or 3 based on the traffic rate

The parties agree that the term "rate rank" refers to the set of bit rates standardized in the G.709 standard. The parties disagree as to whether this term should be limited to only covering the rate ranks defined in the 2003 version of the standard,[3] or whether it encompasses the other rate ranks added to the standard after the '151 patent was filed (e.g., k = 2e, 3e, 4, flex, 25, 50 and Cn), or that may be added in the future.

The Federal Circuit has explained, "as is well established, an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1370 (Fed. Cir. 2008). For example, in *SuperGuide Corp. v. DirecTV Enters., Inc.*, the claim at issue described a TV guide that allowed a user to search for and display content TV content after receiving a "regularly received television signal." 358 F.3d 870, 876 (Fed. Cir. 2004) At the time the patent was filed, all television signals were analog. Nonetheless, the Federal Circuit found that the analog nature of the signal was not critical to the invention, nor was there any express effort to limit the

[1] There is no need for the Court to construe the term "transmitting a low-rate traffic signal in an Optical Transport Network (OTN)"), as it is a preamble term and neither side has requested that the Court construe it as limiting.

[2] The parties also dispute terms 14 and 15 listed in the JCCS based on the phrase "rate rank" contained in those terms.

[3] ODU0 was added to an amended version of the 2003 standard after Huawei filed the '151 patent and contributed the invention to G.709. Note, while client signals can be mapped into ODU0, ODUk cannot be multiplexed into ODU0. An ODUk can only be multiplexed into higher order ODU, but ODU0 is the lowest order ODUk, at least in the '151 patent and the current version of G.709.

invention to analog signals only. Accordingly, it found this term broad enough to encompass digital signals. *Id.* at 881.

In this case, the '151 patent acknowledges that the currently available rate ranks of the G.709 standard (OTN) are 1 – 3. '151 patent at 4:33-38. It further explains that, when using the invention, the number of Gigabit Ethernet ODUs should be selected to fit within an OPUk. For example two gigabit ethernet ODUs (size 1.25 gbs) can fit within an OPU1. *Id.* But nothing about this disclosure indicates that the invention only works with OPU1, OPU2, or OPU3. Indeed, a POSITA would understand that for a higher rate rank (e.g., OPU4 of size 100gbs), this invention could still be used provided that the number of gigabit ethernet ODUs fits within the OPU4. Thus, the claims are not limited to the rate ranks available prior to the '151 filing date.

Verizon's proposal should also be rejected as confusing. The G.709 defines the bit rate for ODU1 for example at 2.5 Gbps, but an ODU1 could carry client "traffic" with bit rates ranging from less than 1 Gbps up to 2.5 Gbps. Verizon's proposal could lead to confusion between the client traffic rate and the standardized ODU rate.

E. Adapted To / Configured To *(Claims 7 – 13)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary. In the alternative: Has the capability to	Plain and ordinary meaning, with the understanding that this means not merely being capable of being configured but rather being actually configured / adapted

The terms "adapted to" and "configured to" are common claim phrases used to refer to a device's capability to perform some limitation. *Berg Tech. v. Foxconn Int'l, Inc.*, 185 F.3d 884, 1999 WL 96414, *3 (Fed. Cir. Feb. 23, 1999) ("The term 'adapted to' is often used in claim drafting to indicate 'capable of.'"); *Audionics Sys., Inc. v. AAMP of Fla., Inc.*, No. CV1210763, 2015 WL 11182054, at *9 (C.D. Cal. July 10, 2015) (construing "adapted to" to mean "capable of"); *Altrium Medical Corp. V. Davol, Inc.*, Case IPR2013-00186, 2013 WL 8595525 at *5 (PTAB Aug. 31, 2013) (same).

Some Courts have construed these claim terms more narrowly to mean "designed to" or

"made to." However, such rulings are based on specific intrinsic evidence. For example, in *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, the Federal Circuit affirmed a narrower construction for a limitation covering an intentional design aspect and because the patent contained some claims that used the phrase "adapted to" and some claims that used the phrase "capable of." 672 F.3d 1335, 1349 (Fed.Cir.2012) (explaining the difference between a glasses frame designed to engage a magnetic sunglasses cover and a frame that is merely capable of doing so, e.g., because it is metallic); *see also Sta–Rite Indus., LLC v. ITT Corp.*, 682 F.Supp.2d 738, 753 (E.D.Tex.2010)) (explaining that the specification used to term "adapted to" to mean something narrower than mere capacity to).

In this case, the claims at issue relate to OTN products that can use a number of different rate ranks defined in the G.709 standard (e.g., ODU0, ODU1, etc.). The claims use the phrases "adapted to" and "configured to" to refer to a device's ability to map low rate data to the low-rate traffic ODU format described in the '151 patent (and which corresponds to ODU0 in the G.709 standard). *See, e.g.*, claim 8 ("the low-rate traffic ODU mapping module is adapted to map the signal of the GFP from the mapping module of the GFP or map the signals of other adaptation protocols from the mapping module of other adaptation protocols to the low-rate traffic ODU"); claim 12 ("wherein the low-rate traffic ODU to ODUk adaptation unit is configured to implement asynchronous multiplexing and de-multiplexing between a low-rate traffic ODU signal originated from the low-rate traffic signal mapping unit and an ODUk signal from ODUk switching unit"). Thus, these claim terms refer to a device's capability to use ODU0; they are not directed towards some requirement that an ODU0-capable device be modified in some way by a user. Indeed, even in cases where Courts have interpreted these claim phrases narrowly, they have clarified that they do not convert apparatus claims into method claims requiring user intervention. *Radware Ltd. v. A10 Networks, Inc.*, No. C-13-02024-RMW, 2014 WL 1572644, at *12 (N.D. Cal. Apr. 18, 2014) (explaining that "configured to" does not require user activation, but does require "that the claimed feature be included in the software"). Accordingly, the Court should adopt Huawei's proposal.

III. '982 PATENT ANALYSIS

A. In Groups of M Bytes *(Claims 1, 5, 9, 12)*

Huawei's Proposal	Verizon's Proposal
In a M-byte granularity	Plain and ordinary meaning

The claims of the '982 patent require "map[ping] a Lower Order Optical Channel Data Unit (LO ODU) signal into a payload area of an Optical Channel Data Tributary Unit (ODTU) signal in groups of M bytes," or a comparable requirement for de-mapping. *See, e.g.,* '982 claim 5. Huawei proposes that this refers to how bytes are mapped from the LO ODU into the ODTU. Based on its IPR filings, Verizon proposes that this term refers to how bytes are organized within an ODTU or HO OPU. For example, if each byte of the LO ODU signal were a marble in a jar, you can imagine using a measuring cup designed to hold 4 marbles (4-byte) to scoop marbles out of the jar and place them into a new box of a different size. Huawei proposes that this term refers to the size of the marble scoop. Verizon proposes that this term refers to the size of the box that receives the scooped marbles. In other words, Verizon proposes that a system practices these claims by using a 1-byte scoop to scoop marbles from the jar into boxes of size 4-bytes. Huawei requests a construction of this term to clarify that Verizon's interpretation is incorrect.

The terms OPU and ODU refer to structures defined in the G.709 standard for transporting data. An ODU is an OPU with additional overhead information. Each ODU or OPU has a bit rate defined in the standard. An OPU with a higher bit rate can be divided into multiple tributary slots that are used to transport multiple ODUs with lower bit rates. For example, an OPU with a bit rate of 10 Gbps can be divided into 8 tributary slots (each 1.25Gbps). This 10 Gbps OPU can be used to transport 4 ODUs with a bit rate of 2.5 Gbps by allowing each 2.5 Gbps ODU to occupy two tributary slots. The '982 patent uses the terms LO ODU and HO POU to refer to the fact that a HO OPU has a higher bit rate than a LO ODU.

An ODTU is a temporary structure designed to hold information from a LO ODU until it is placed into a HO OPU. For example, information from a 2.5 Gbps LO ODU is mapped into an ODTU, and then the information in that ODTU is multiplexed to two of the 1.25 Gbps tributary slots of a 10Gbps HO OPU. The '982 patent describes the process of M-byte mapping as:

> After the number of tributary slots M to be occupied by the ODTU is determined, ***the amount of the LO ODU(s) is mapped to the payload area of the ODTU in a M-byte granularity***. ***This means mapping M bytes of client data as a unit. In the above example, M=5***, mapping the amount of the LO ODU(s) of M-byte to the payload area of the ODTU in the M-byte granularity means mapping the 76,111 bytes of LO ODU data in 15,222 or 15,223 5-byte units to the payload area of the ODTU, i.e. ***performing the mapping operation every 5 bytes of LO ODU***, and totally mapping for 15,222 or 15,223 times.

'982 patent at 5:36-46 (emphasis added). This confirms that the M-byte mapping of the claims refers to the granularity of how bytes are placed from the LO ODU into the ODTU (i.e., the size of the marble scoop).

Finally, Huawei is not opposed to a ruling that no construction is necessary for this term, provided that the Court explains that Verizon's interpretation of this claim term is incorrect.

B. Lower Order Optical Data Unit (LO ODU) Signal / Higher Order Optical Channel Payload Unit (HO OPU) Signal *(Claims 1, 5, 9, 10, 12, 13)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	ODUk (k=0, 1, 2, 2e, 3, 3e), where k is less than a k value for a higher order OPU OPUk (k=1, 2, 3, 3e, 4), where k is greater than the k value for the lower order ODU

The terms LO ODU and HO OPU are well understood in the art and, with the help of expert testimony, understandable by a lay jury. The problem with Verizon's definition is that it limits the scope of these claims to only the ODU and OPU rates that were defined in the 2009 version of the standard (i.e., k = 0, 1, 2, 2e, 3, 3e, 4). As with the term "rate rank," the Court should not limit the scope of the claims to exclude more recent versions of the G.709 standard.

The '982 patent acknowledges that the "current OTN" standard specifies the rate ranks proposed by Verizon. '982 patent at 1:45-1:55. However, it does not identify those ranks as critical to the invention. Moreover, it acknowledges that that the standard was in need of, and in the process of, revision. '982 patent at 1:39-44 ("the current OTN technology is designed based on speech services such as Synchronous digital hierarchy (SDH), and cannot well support the development trend of data services like Ethernet, thus studies are gradually carried out on the next generation of OTN network (NGOTN)"). Accordingly, a POSITA would recognize that the

invention could be practiced with other rate ranks provided that one could identify the number M for mapping M-bytes into the ODTU. Thus, the Court should reject Verizon's proposal.

C. [Encapsulating / Encapsulate] Overhead Information to an Overhead Area of the ODTU Signal *(Claims 1, 5)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	[embedding/embed] overhead information from another protocol or layer into the overhead area of the ODTU signal

The dispute here is whether the Court should re-write this term to require "embedding" instead of "encapsulating," and whether it should insert the new requirement that overhead information be "from another protocol or layer." But a person of ordinary skill in the art seeking to understand the meaning of this phrase need look no further than the claim language itself. Verizon's efforts to re-write that language is improper. *See Thorner*, 669 F.3d at 1366.

The specification consistently uses the term "encapsulating" to refer to this step in the claimed methods, and it does so without using the ambiguous phrase "another protocol or layer." *See, e.g.,* '982 patent at 6:20-23 ("encapsulating the overhead information to the overhead area of the ODTU includes encapsulating the amount information of the LO ODU(s) of M-byte units to the overhead area of the ODTU."). The intrinsic record simply contains no disclaimer or lexicography to warrant re-writing this portion of the claims. Similarly, Verizon's reference to "another protocol or layer" appears to be made out of whole cloth. In fact, the G.709 standard states that the overhead information of an ODTU communicates the quantity of M-byte units, not information from another protocol or layer. *See* Bortz Decl. at ¶ 43.

D. Time Slot *(Claim 1)*

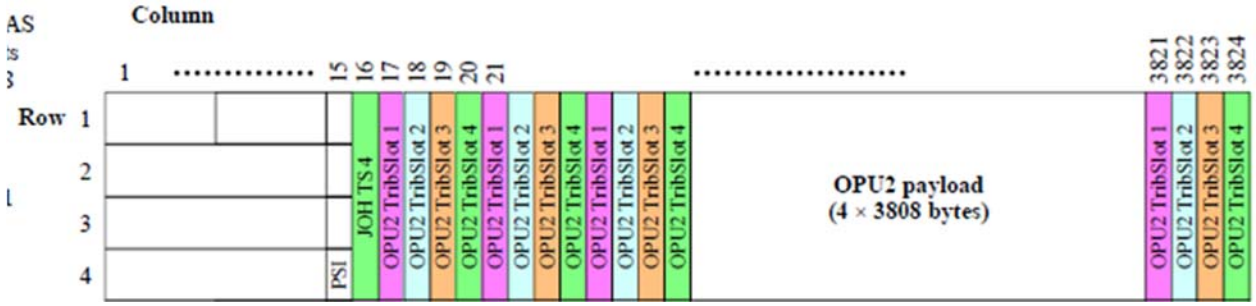
Huawei's Proposal	Verizon's Proposal
No construction necessary. In the alternative: Tributary slot	fixed period of time during which data is transmitted or received

This term would be well understood by a POSITA familiar with the G.709 standard such that no construction is necessary. Verizon's proposal is unnecessary and potentially confusing because it is based on an extrinsic source instead of the '982 patent or G.709 standard. The term "time slot" appears only in claim 1, where M equals the number of time slots. The other claims

identify M as equal to the number of "tributary slots." Similarly, the specification consistently identifies M as the number of tributary slots. *See, e.g.,* '982 patent at 2:15-2:18; 4;12-4:14. In the context of the '982 patent, these two terms refer to the same concept.

A POSITA would be familiar with the fact that the terms "time slot" and "tributary slot" are interchangeable. Dr. Bortz has explained: "as a practical matter, each tributary slot need not be transmitted over a continuous block of time before beginning to transmit the next tributary slot. Nonetheless, each tributary slot represents a slice of the available bandwidth (i.e., the amount of data that can be transported over a given time, e.g. a time slot). For this reason, the terms "tributary slot," and "time slot" are used interchangeably in the OTN field." Bortz Decl. at ¶ 47; *see also id.* at 48 (describing discussions of "time slots" in various OTN documents). Similarly, Verizon's expert has testified: "The G.709 standard multiplexes signals by combining multiple transport structures of one "k" index into a single transport structure of a higher "k" index (i.e., higher bit rate) which has been divided into **time slots (known as "tributary slots")**." Min Decl. at ¶ 34. Accordingly, if the Court believes that a construction is necessary, it may construe this term to mean "tributary slot."

Verizon's proposal is erroneous because it is based on an extrinsic dictionary definition that does not account for how time slots work in the G.709 standard. According to the G.709 standard, when the data in a tributary slot is prepared for transmission over the OTN, it is not transmitted over a continuous block of time (e.g. from 03:17 – 03:18). As shown below, each tributary slot is spread over multiple columns of a HO OPU (tributary slot 1 is in columns 17, 21, 25, etc.) When this HO OPU is transmitted, the bytes in row 1 are transmitted in sequential order (15 then 16 then 17, etc.), followed by the bytes in row 2, etc.



Bortz Decl. at ¶¶ 46-47. As a result, each tributary slot corresponds to a time slot, but that time slot is discontinuous (e.g., it occupies 03:17, 03:21, 03:25, etc.). A POSITA would understand this aspect of the G.709 standard and would not interpret the '982 patent to be inconsistent with the standard. *See* '982 patent at 1:35-1:48 (explaining that the patent is directed toward an improvement for the OTN standard). Indeed, doing so would exclude OTN devices from the scope of the '982 patent, which would defeat the purpose of the patent. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (explaining that a claim interpretation that excludes all embodiments from the scope of a claim "is rarely, if ever, correct and would require highly persuasive evidentiary support").

E. Tributary Slot *(claims 4, 5, 8, 9, 11, 12, 14)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	a slot interleaved within the OPUk that includes a part of the OPUk OH area and a part of the OPUk payload area

This term would be well understood by a POSITA familiar with the G.709 standard, and based on the parties' meet and confer, they agree that this term has the ordinary meaning it would have in the context of the G.709 standard. Indeed, the specification states that the patent is an improvement to the G.709 standard that builds upon concepts like tributary slots that were already present in the standard. '982 patent at 1:35-1:55. Thus, no construction is necessary.

The problem with Verizon's construction is that it does not accurately capture that meaning. As used in the G.709 standard, the term "tributary slot" can refer to a slot of payload information, or it can refer to a slot of payload information plus overhead (OH) information. *See* Bortz Decl. at ¶¶ 51-52.

F. Optical Channel Data Tributary Unit (ODTU) Signal *(Claims 1, 4, 5, 8 – 14)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	Optical Channel Data Tributary Unit, as defined in Section 19.2 of the G.709 standard (12/2009)

As with the terms rate rank, LO ODU, and HO OPU, Verizon's proposal improperly limits the claims to covering a particular version of the standard. The parties generally agree that

the '982 patent uses the term "ODTU" as it is normally understood in the context of the G.709 standard, but that is no reason to limit the scope of the claims to covering only the rates and ODTU sizes that existed in 2009 if the claim language is otherwise broad enough to cover later revisions to the G.709 standard. *Innogenetics*, 512 F.3d at 1370

IV. '236 PATENT ANALYSIS

A. client signal byte number Cn *(claims 1-15)*

Huawei's Proposal	Verizon's Proposal
The number of client signal bytes in one OTN frame	Cn as defined in Equation D-1 of the G.709 Standard (12/2009)

Verizon's proposal for this term seeks to limit the variable Cn to a single and particular method of calculating Cn based, not even on the specification, but rather the standard. This amounts to a rewriting of the claims to limit the scope of the invention—something that only the patentee is entitled to do. *See Thorner*, 669 F.3d at 1365. Verizon has not identified any disclaimer or definition to allow otherwise. *See id.*; *Golden Bridge Tech.*, 758 F.3d at 1365. And to be sure, the intrinsic evidence does not limit the claims' recitation of Cn to a particular method of calculating it, and the Equation D-1, in particular, is not recited in the specification. Huawei's construction is appropriate and should be adopted. It hews closely to the claim language itself and consistent with the specification's teachings. *See* Bortz Decl. at ¶¶ 55-56; *see also* '236 patent at Abstract, 1:64-65, 3:1-3, 10:24-30, 11:65-67, 14:1-19. This also comports with the Standard's description of Cn on a per-frame basis. *See* G.709 Standard at Annex D.

Moreover, not even the G.709 Standard itself limits the calculation of Cn to just Equation D-1. *See* Bortz Decl. at ¶¶ 57-58. As an initial matter, Cn has to be an integer, and this is recognized by the Standard where it specifies the use of Equation D-2 to provide an integer of the number calculated in D-1. *See id.* at ¶ 58; Annex D ("As only an integer number of n-bit data entities can be transported per server frame or multiframe, the integer value Cn(t) of cn has to be used."). Thus, Verizon's proposal would cause issues from a technical standpoint. *See* Bortz Decl. at ¶ 58. Additionally, the Standard also describes at least one other equation (D-6) for calculating Cn. *See* G.709 Standard at Annex D; Bortz Decl. at ¶ 57. Verizon's proposal would,

then be: (1) reading limitations into the claim without justification; (2) using extrinsic evidence to do so; and (3) cherry-picking one piece of that extrinsic evidence to the exclusion of other aspects of the same source of extrinsic evidence. None of this is countenanced by claim construction law. *See Thorner*, 669 F.3d at 1365; *Liebel-Flarsheim*, 358 F.3d at 913; *Teleflex*, 299 F.3d at 1324; *Golden Bridge Tech.*, 758 F.3d at 1365.

Also, Verizon's proposal would render the claim language nonsensical and confusing as it would either insert into the claim language an annotation to look up an equation or an equation dictating a specific method of calculation. The Court can reject the proposal on this basis alone. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1255 (Fed. Cir. 2010) ("A claim construction that renders asserted claims facially nonsensical cannot be correct."); *cf. Phoenix Licensing, L.L.C. v. AAA Life Ins. Co.*, 2015 WL 1813456, at *27 (E.D. Tex. Apr. 20, 2015) (rejecting a proposed construction that replaced a term with "a potentially confusing phrase intended to express the same meaning").

B. if the Cn transported in the OTN frame needs to be [increased / decreased] / the Cn transported in the OTN frame doesn't need to be increased or decreased *(claims 1-3, 7-9, 15)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary. In the alternative: if the Cn transported in the OTN frame needs to be increased / decreased relative to a Cn in a previous OTN frame	Indefinite under 35 U.S.C. § 112 ¶ 2

It is not entirely clear why Verizon believes this term is indefinite. On the parties' meet-and-confer, Verizon indicated only that it thought this term was indefinite because it was not clear what was meant by "needs to be increased / decreased." The specification, however, describes the Cn needing to be increased or decreased and illustrative examples thereof. *See* Dkt. No. 59-2 at 18 (Huawei's identification of specification support); Bortz Decl. at ¶ 61 (identifying specification excerpts). The claims at issue "viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty"

and are definite. *See Nautilus*, 572 U.S. at 910; *cf.* Bortz Decl. at ¶¶ 60-62. But while the Supreme Court requires a consideration of the specification in determining indefiniteness, Verizon's disclosures identify no portion of the specification relating to this term. *See* Dkt. No. 59-3 at 22-23. Thus, Verizon cannot carry its clear and convincing burden on indefiniteness. *See Warsaw Orthopedic*, 778 F.3d at 1371. To the extent the Court believes clarification is necessary, Huawei's alternative proposal should be adopted. Huawei's proposal clarifies that the increase or decrease is relative to a Cn in a previous frame, and this comports with the teachings of the specifications. *See, e.g.*, '236 patent at 14:1-19; *see also* Bortz Decl. at ¶ 62.

C. revers[e/ing] … values of [a/the] [first / second] series of bit positions / values of a [first / second] series of bit positions…are reversed / values of a first series or a second series of bit positions … aren't reversed *(claims 1-12, 15)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	reversing the order of the values of a [first / second] series of bit positions

Verizon's proposal rewrites the claim language from reversing the ***values*** of a series of bit positions to reversing the ***order of the values*** of the series of bit positions. This is improper. *See Thorner*, 669 F.3d at 1365; *Liebel-Flarsheim*, 358 F.3d at 913. It is also inconsistent with the specification that discusses reversing values of the bit positions but not the order of the bit positions or the order of their values. *See, e.g.*, '236 patent at 7:62-67, 11:27-36; *see also* Bortz Decl. at ¶¶ 64-65. Additionally, Verizon's proposal is confusing—it does not clarify the claim language but instead makes the claim meaning unclear. *See* Bortz Decl. at ¶ 64. This is another reason to reject Verizon's proposal. *See Phoenix Licensing*, 2015 WL 1813456, at *27.

D. [a / the] first series of bit positions / [a / the] second series of bit positions *(claims 1-12, 15)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	a second series of bit positions that does not overlap with the first series

Verizon's construction improperly introduces limitations into the claim language. The specification includes the following table:

TABLE 1

Cbyte1 (row = 1)								Cbyte2 (row = 2)								Cbyte3 (row = 3)							
C	C	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D

The specification describes Table 1: "For example, in the embodiment as shown in Table 1 in the second area of the Cbyte field, 22 bit positions are, divided into two series of bit positions, that is, I bit positions and D bit positions respectively. The I bit positions and the D bit positions are alternately set, and all the 22 bit positions (that is, 11 I bit positions and 11 D bit positions) of the second area are evenly distributed." *See* '236 patent at 9:5-11. Thus, to the extent Verizon's proposal is intended to mean that there cannot be alternating bits, that would be inconsistent with the teachings of the specification and a POSITA's understanding. *See* Bortz Decl. at ¶¶ 67-68.

Thus, Verizon's proposal should be rejected for excluding contemplated variations that are within the scope of the inventions. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). In any event, these terms as used in the claims in specification would be understood by a POSITA and do not need a further definition. *See* Bortz Decl. at ¶¶ 66-68; *cf. Thorner*, 669 F.3d at 1365; *Liebel-Flarsheim*, 358 F.3d at 913.

E. [whether] the [client signal byte number] Cn exceeds [a / the] range [of client signal byte number] *(claims 2, 3, 5, 8, 9, 11, 13, 14)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary.	whether the client signal byte number Cn is higher than a maximum value of Cn or lower than a minimum value of Cn

The claim language recites that there is a range. Verizon's proposal appears to improperly add as additional limitations that there need be an absolute maximum and absolute minimum value. This is not required by the claim or contemplated by the specification. *See Thorner*, 669 F.3d at 1365; *Liebel-Flarsheim*, 358 F.3d at 913. In particular, different client signals may have different minimums and maximums. *See* Bortz Decl. at ¶¶ 69-72. For example, in Column 7, the specification includes various equations for Cn maximum and minimum values, but every single one of those equations explicitly factors in the particular "Client Signal Rate + Frequency

Deviation." This means that for different client signals, there will be different ranges.[4] Verizon's proposal does not account for this and thus improperly excludes embodiments from the specification and should be rejected. *Cf. Vitronics*, 90 F.3d at 1583.

F. identifying the Cn is normal [in a first area] *(claims 3, 9)*

Huawei's Proposal	Verizon's Proposal
No construction necessary. In the alternative, the longer term "identifying the Cn is normal in a first area" to be construed as "filling a first area with an identifier indicating that the Cn is normal"	identifying the Cn falls in a range between the minimum value and the maximum value of the detected client signal Cn, or that the client signal type remains unchanged

The claim term would be understood by a POSITA when read in in the proper context of the overall claim language and specification, and thus needs no further construction. *See Thorner*, 669 F.3d at 1365; *Liebel-Flarsheim*, 358 F.3d at 913; *Vitronics*, 90 F.3d at 1583. The claim term is used in the longer phrase "identifying the Cn is normal in a first area in an optical channel payload unit-k (OPUk) overhead field of the OTN frame." And reading the term within the context of the overall claim about transmitting a client signal in an OTN frame, a POSITA would understand that the claim term means that a first area of the overhead field is filled with an identifier indicating that the Cn is normal. *See* Bortz Decl. at ¶¶ 75-76. This understanding is consistent with the specification as well as the remainder of the claim referring to the filling of a second area of the overhead. *See id.*; '236 patent at 5:35-44, 6:48-63, 7:4-8, 12:2-11, 12:25-29, 15:30-34, 16:39-44, Figures 4 and 10, and claims 1, 3, 5, 6, 7, 9, 11, 12. Because Verizon's proposal looks at the term out of context (e.g., ignoring the "first area"), its proposal appears to improperly interpret "identifying" as another determination or assessment step in addition to the one recited in the claim. *See* Bortz Decl. at ¶ 75.

Moreover, Verizon's proposal recites "**the** detected client signal Cn," but there is no

[4] Relatedly, the G.709 Standard also reflects that "floors" and "ceilings" will depend on a particular client signal type. *See, e.g.*, G.709 Standard at Annex D (Equation D-14 showing "floor" and "ceiling" relating to a given f_{client}).

previously recited "detected client signal Cn" in the claims at issue or the independent claims from which they depend. *See id.* at ¶ 77. The independent claims recite ***acquiring*** a client signal and ***generating*** a Cn—these are two things, and neither one of them is recited as being "detected." *See id.* Additionally, Verizon's proposal seeks to introduce unnecessary conditions on when it is that a Cn is normal, but the claim language already provides those conditions. *See* Bortz Decl. at ¶ 78. Thus, Verizon proposes to construe one claim term out of context, add unnecessary constraining limitations to the claim language, and introduce confusion, ambiguity, and antecedent basis problems into the claim language. It should be rejected. *See Becton*, 616 F.3d at 1255; *Phoenix Licensing*, 2015 WL 1813456, at *27.

G. generat[e/ing] a client signal byte number Cn transported in an OTN frame period according to [a/the] client signal clock and a system clock / computing the Cn transported in the OTN frame period according to a client signal clock and a system clock *(claims 1-3, 7-9, 13-15)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	computing the client signal byte number Cn that was transported in an OTN frame period from the value of the client signal clock and the value of the system clock

The claim language here recites that a Cn is generated according to a client signal clock and a system clock, is supported by the specification, and does not need further construction. *See, e.g.*, '236 patent at 3:1-3. Indeed, Verizon has not shown that the intrinsic evidence justifies further limitation. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. Moreover, Verizon's proposal rewrites the claim in unwarranted and constricting ways. First, Verizon's proposal changes the claim language's "**a** client signal byte number Cn" to "**the** client signal byte number Cn." Next, Verizon's proposal rewrites a claim language from "**a** client signal clock and **a** system clock" to "**the value** of **the** client signal clock and **the value** of **the** system clock." *See* Bortz Decl. at ¶ 80.

There is no intrinsic evidence demanding these narrowing claim constructions. The changing of the article "a" from the claim to the article "the" in Verizon's proposal alone is a

constraining proposal that is not justified. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. The claim language also does not recite a "value of" a clock, and the plain language of which would allow for the generation of a Cn based on other parameters of the clock. *See* Bortz Decl. at ¶¶ 81-82 (describing various aspects of clock rates, including long-term average clock rates and rates of change of clock rates). Verizon's proposal would also change "a…Cn" to "the…Cn" (e.g., claim 1), "a client signal clock" to "the client signal clock" (e.g., claim 13), and "a system clock" to "the system clock" (e.g., claim 1, claim 13) before those terms were introduced in their claims. *See* Bortz Decl. at ¶ 83. Essentially, Verizon's proposal introduces antecedent basis problems and should be rejected. *See Becton*, 616 F.3d at 1255.

V. '505 PATENT ANALYSIS

A. Optical Channel Data Tributary Unit (ODTU) [frame] / ODTU [frame] *(claims 1-4)*

Huawei's Proposal	Verizon's Proposal
No construction necessary, however the Court should clarify that the ODTU frame referred to in the claims is not synonymous with the ODTUjk structure criticized in the patent	Optical Channel Data Tributary Unit, as defined in Section 19.2 of the G.709 standard (12/2009)

The dispute with respect to this term is that Verizon wants to define the term "ODTU" to refer to two types of ODTU structures (ODTUk.ts and ODTUjk) while Huawei contends that the ODTUjk structure is not encompassed by the claim language. This comes down to a validity issue: Verizon wants to argue that the ODTUjk structure preceding the relevant standards is prior art and encompassed by the claim language. However, this result is inconsistent with the specification that describes the prior ODTU structures and criticizes their shortcomings. *See generally* '505 patent at Background; Bortz Decl. at ¶ 86. Also, the claim language recites "mapping information of the quantity of n-bit data units of the client signal to an overhead of a first Optical Channel Data Tributary Unit (ODTU) frame." While the claims contemplate mapping information from the Cn byte, the ODTUjk only has JC, NJO, and PJO bytes, not a Cn byte. *Contrast* G.709 Standard at 132-138 (describing and illustrating ODTUjk overhead as including JC, NJO, and PJO bytes but making no mention of Cn bytes) *with id.* at 128-134

(describing and illustrating ODTUk.ts as including Cm or Cn information); *see also* Bortz Decl. at ¶¶ 86-88. Thus, Verizon's proposal should be rejected as it would be at odds with the teachings of the specification and, worse, the claim language and structure itself. *See Vitronics*, 90 F.3d at 1583; *Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365.

B. determining a quantity of n-bit data units of the client signal based on a clock of the client signal and a local clock *(claims 1-4)*

Huawei's Proposal	Verizon's Proposal
No construction necessary. In the alternative: determining a number of n-bit data units of the client signal based on a clock of the client signal and a local clock	determining the number of n-bit data units of the client signal from the value of the client signal clock and the value of the local clock

As with the '236 patent's term for "generating a client signal byte number Cn…, " Verizon's proposal improperly rewrites the claim language to change the articles and add new limitation. But Verizon has not justified these limitations. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. As before, the changing of the article "a" from the claim to the article "the" in Verizon's proposal alone is a constraining proposal that limits the quantity of data units as well as the clocks, and it is not justified. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. Also, because it appears to exclude disclosed variations with more than one client signal, it should be separately rejected on that basis. *See Vitronics*, 90 F.3d at 1583. There is also no justification for changing the commonly understood word "quantity" to "number." Nor is there justification for limiting the determination to "values" of clocks instead of allowing use of other parameters of the clocks. *See* Bortz Decl. at ¶¶ 89-92 .

C. n-bit data units / n indicating the number of the multiple OPUk TSs *(claims 2, 3)*

Huawei's Proposal	Verizon's Proposal
No construction necessary, but the Court should clarify that the word "n-bit data unit" refers to a data unit containing some number of bits, not a data unit with bits equal to the number of the multiple OPUk TSs	units of data comprising n bits, where the value 'n' is the same throughout the claim

The variable "n" is commonly used as a placeholder to denote a plurality of something. *See* Bortz Decl. at ¶¶ 94-95 . Here, the claim language recites "n-bit data units" and "n indicating

the number of multiple OPUk TSs." Verizon's proposal seeks to make the number of bits ***always*** equal to the number of OPUk TSs. It is possible for these to sometimes be the same, but the patent does not require them to always be the same. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. In fact, a POSITA would recognize that the patent uses the common variable "n" to refer to different things based on different context. *See* Bortz Decl. at ¶¶ 94-96, 98; *cf.* '505 patent at 2:54, 5:18, 5:19, 5:28, 5:45, 11:2.

Furthermore, regarding the number of OPUk TSs, the specification discloses: "The n (number) of OPUk TSs in the OPUk payload area depends on the rate of the client signal and the type and number of client signals so that each OPUk TS can use the agnostic CBR service mapping method to transmit each client signal transparently, and the maximum possible frequency offset of the client signals is tolerable." *See* '505 patent at 5:45-50. Thus, the patent expressly discloses that the number of OPUk TSs depends on the rate of the client signal and the type and number of client signals—not on the number of bits in a data unit. *See* Bortz Decl. at ¶¶ 96-97. Thus, Verizon's proposal is inconsistent with the specification and should be rejected. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365; *Vitronics*, 90 F.3d at 1583.

D. Optical Channel Payload Unit-k Tributary Slot (OPUk TS) *(claims 1-4)*

Huawei's Proposal	**Verizon's Proposal**
No construction necessary.	Optical Channel Payload Unit-k Tributary Slot (OPUk TS), where k = 1, 2, 3, or 4

Huawei agrees that the variable "k" represents a bit rate. But the patent does not require k to only be 1, 2, 3, or 4. The specification describes a bit rate j that can be 1, 2, or 3, and then describes a bit rate k, "where k represents the supported bit rate and is greater than j." *See* '505 patent at 1:42-59; *see also id.* at 5:36-44 (giving exemplary frame rates based on value of k being 1 or 2). But "greater than j" does not mean "just one integer greater than j," and a POSITA would not understand the specification to be imposing an upper limit on the value of k. *See* Bortz Decl. at ¶¶ 99-101. In any event, even if there is only one disclosed embodiment, absent definition or disclaimer, the claims are not limited to just that disclosed embodiment. *See Liebel-Flarsheim*, 358 F.3d at 913. Here, Verizon has not established that definition or disclaimer apply

to limit the claims just to where k is 1, 2, 3, or 4. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. Verizon's proposal should be rejected.

E. mapping each byte of the second ODTU frame to at least one Optical Channel Payload Unit-k Tributary Slot (OPUk TS) *(claims 1-4)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	mapping each 8-bit block of the second ODTU frame to at least one OPUk TS

Verizon's proposal is superfluous and unnecessary. It seeks only to replace the word "byte" with the phrase "8-bit block." But a "byte" is comprised of "8 bits" (*see* Bortz Decl. at ¶ 103), so, it is not clear why Verizon wants this construction. In any event, Verizon has not met the exacting standards to show definition or disclaimer to permit the claim language to be rewritten. *See Thorner*, 669 F.3d at 1365; *Golden Bridge Tech.*, 758 F.3d at 1365. Additionally, while the term "byte" is a well-understood term of the art, the phrase "8-bit block" potentially introduces confusion into the claim. *See* Bortz Decl. at ¶¶ 102-104. Verizon's proposal should be rejected on this basis as well. *Cf Phoenix Licensing*, 2015 WL 1813456, at *27.

VI. '253 PATENT ANALYSIS

A. Judging Terms – "judging . . . whether the identifier contained in the fault alarm message is different from a fault identifier record stored in the second node" *(Claims 1, 4, 6, 9, 14)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	"judging whether the identifier contained in the fault alarm message is different from an identifier stored in the second node for the port on which the message is received" (claim 1) See JCCS for full list of proposals *Alternatively, indefinite*

Each of the above referenced claims contains a limitation requiring judging whether the identifier contained in a fault alarm message is different from a stored fault identifier record or information. The dispute is whether the Court should insert language requiring that the judging be performed by comparing the identifier to stored information received ***by the same port*** and nothing else. This amounts to a rewriting of the claims to limit the scope of the invention—

something that only the patentee is entitled to do. *See Thorner*, 669 F.3d at 1365. Verizon has not identified any disclaimer or definition to allow otherwise. *See id.*; *Golden Bridge Tech.*, 758 F.3d at 1365. Additionally, Verizon abstained from proposing any construction for these terms in its IPR Petitions and instead, merely applied the terms' plain and ordinary meaning. Melendez Decl., ¶¶ 37-38. And to be sure, the intrinsic evidence does not limit the claims' judging only of information previously received and stored by a single port. *See* Melendez Decl., ¶¶ 32-36.

Neither the claim language nor the specification support Verizon's narrow reading of these terms. For example, the specification provides embodiments in which the identifier from the alarm message is judged against information that could be obtained from any or both ports of the "second node." Indeed, the patent describes "Embodiment 4" as differing from the previous embodiments "in that: the source addresses of the fault messages are stored as a fault identifier ***based on the port***." 6:54-56. Accordingly, the patent recognizes that at least some embodiments are ***not*** limited to information for a specific port for judging whether the identifier is different.

Verizon's proposed construction also excludes embodiments in which the stored information or record is null. For example, the specification describes in one embodiment, "at the beginning, the ring is in the normal state and the maintained fault identifier is null." 4:66-67. Thus, "the change of the fault identifier is detectible" because the indicator from the fault alarm message differs from the null value at the node. 4:67-5:4. Thus, Verizon's proposal both needlessly reads in limitations from a particular embodiment and excludes several other embodiments, contrary to established law regarding claim construction. *See Liebel-Flarsheim,* 358 F.3d at 913 (explaining that "it is improper to read limitations from a preferred embodiment described in the specification . . . absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.").

Verizon also attempts to additionally rewrite the claim by removing the clause "a second node" following the word "judging." In doing so, Verizon obfuscates the fact that the judging step is carried out by "a second node" and not merely one specific port, as their construction suggests. Verizon knows that it if completely removed the "second node" language, it's flawed

construction would be apparent and rejected outright. Instead, Verizon moves the language of a "second node" to a different part of the claim such that the "second node" is merely the location in which the identifier is stored. But as explained above, that is inconsistent with both the claim language and the understanding of a POSITA in light of the disclosure in the specification. *See* Melendez Decl., ¶¶ 32-36. Accordingly, the Court should reject Verizon's attempt to redefine the scope of the claim and instead, give the term its plain and ordinary meaning.

B. Configured To *(Claims 4, 6, 8, 14)*

The dispute here is identical to the "configured to" dispute of the '151 patent. The Court should reject Verizon's proposal for the same reasons. *See also* Melendez Decl., ¶¶ 40-44.

C. Null *(Claim 12)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	No value

Here, Verizon attempts to limit the term "null" to one specific meaning of the term, even though the plain and ordinary meaning of the term is broader than Verizon's proposal. In particular, the term "null" can mean a lack of a value, such as an empty string, or can mean a value that is non-consequential, such as a zero, and treated by the system in a particular manner. Melendez Decl., ¶¶ 45-46. Verizon attempts to narrow the term to mean ***only*** "no value," excluding the embodiment where "the fault identifier record stored is null" because it contains a zero value or sequence of all zeroes. Again, Verizon is overstepping the boundaries in trying to rewrite the claims to limit the scope of the invention. *See Thorner*, 669 F.3d at 1365. Moreover, Verizon has not identified any disclaimer or definition to allow otherwise other than two citations to irrelevant standards. *See id.*; *Golden Bridge Tech.*, 758 F.3d at 1365.

The specification and intrinsic evidence do not limit the term "null" to mean "no value." Indeed, the patent actually uses the term "null" with respect to a value, directly contradicting Verizon's proposal. In particular, the patent contemplates when the ring is "in the normal state" that the "maintained fault identifier is null." 4:66-67. And in describing how the node can judge the received indicator against the stored identifier, the patent describes that "a port changes from

a null value to a ***non-null value***." 5:7-9. Moreover, Verizon was content with the plain and ordinary meaning of the term in its IPR Petitions. Melendez Decl., ¶¶ 47-48. Accordingly, "null" does not mean "no value," and no construction is necessary.

VII. '485 PATENT ANALYSIS

A. A Link Where a Normally Blocked Port Locates *(Claims 8, 10)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	a link connected to a port that has been configured to be blocked when there are no faults in the Ethernet ring network

The dispute with respect to this term is that Verizon wants to introduce additional limitations of "when there are no faults in the Ethernet ring network" and "that has been configured to be …" without any support from the intrinsic or extrinsic record. The Court should reject this attempt to rewrite the claims. *See Thorner*, 669 F.3d at 1365. Instead, the term's plain and ordinary meaning is sufficiently clear and should be adopted.

The term speaks for itself, "a link where a normally blocked port locates" means a link between two ports for two nodes, where one of the ports is the port that is normally blocked to prevent loops in the Ethernet ring network. A POSITA would understand the term consistent with its plain meaning, particularly in the context of Ethernet Ring Protection Switching and the G.8032 standard. Melendez Decl., ¶¶ 86-90. In contrast, Verizon's proposal only adds language that appears nowhere in the specification and otherwise obfuscates the term's meaning.

Additionally, Verizon's addition of the conditional language "when there are no faults in the Ethernet ring network" would exclude embodiments in which there are faults in the network, but the normally blocked port link remains blocked (e.g., because it is needed to prevent loops due to the network configuration). Additionally, Verizon abstained from proposing any construction for these terms in its IPR Petitions and instead, merely applied the terms' plain and ordinary meaning. Melendez Decl., ¶ 89. With no support, Verizon's attempt to rewrite this claim term to exclude embodiments should be rejected.

B. The Non-Clearing Indication Indicates That a Forwarding Table Is Not Desired To Be Cleared By The Other Ring Nodes *(Claim 8)*

Huawei's Proposal	Verizon's Proposal
the non-clearing indication indicates to the other ring nodes not to clear a forwarding table	Indefinite under 35 U.S.C. § 112 ¶ 2.

Although not entirely clear, Verizon had previously indicated that it thought this term was indefinite because it was not clear what was meant by "is not desired to be cleared." The specification, however, describes how the non-clearing indication is used to indicate to the other ring nodes not to clear a forwarding table. *See e.g.*, 6:28-54 (embodiment describing the use of a "flush identifier" ("FI") that can be set to 0 or 1 depending on whether the forwarding table needs to be flushed by the receiving node). The claims at issue "viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty" and are definite. *See Nautilus*, 572 U.S. at 910. To the extent the Court believes clarification is necessary, Huawei's proposal should be adopted. *See also* Melendez Decl., ¶¶ 91-96.

C. Automatic Protection Switching (APS) Packet In Ethernet Protection Switching Mechanism *(Claim 8)*

Huawei's Proposal	Verizon's Proposal
No construction necessary.	A packet used in an automatic protection switching protocol in an Ethernet protection switching mechanism

The claim language is what is used in the specification to describe the term and a POSITA would understand what is meant by an APS packet in an Ethernet protection switching mechanism, particularly in context of ERP. *See* Melendez Decl., ¶¶ 97-102. Accordingly, the Court should reject Verizon's proposal to rewrite the claim to include the word "protocol" that does not appear anywhere in the patent.

VIII. ALLEGED SECTION 112(6) TERMS

Because these terms lack the word "means," Verizon bears the burden of rebutting the presumption that § 112 ¶ 6 does not apply to each term. *Samsung Elecs. Am., Inc. v. Prisua Eng'g Corp.*, 948 F.3d 1342, 1354 (Fed. Cir. 2020). That presumption can be rebutted if the claim term as a whole merely contains functional language without describing the structure to

perform that function. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015).

However, the presumption is not rebutted when a POSITA would understand the claim term to refer to known structure, including known computing structure such as a general purpose computer or processor. *See Samsung Elecs. Am., Inc. v. Prisua Eng'g Corp.*, 948 F.3d 1342, 1354 (Fed. Cir. 2020) (finding that the term "digital processing unit" does not invoke § 112 ¶ 6 because it refers to a "general purpose computer" or "central processing unit," either of which constitutes sufficiently definite structure); *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018) (ruling that the terms "program" and "user interface code" did not invoke § 112 ¶ 6 because they referred to conventional graphical user interface programs or code, existing in prior art at the time of the inventions); *Canon, Inc. v. TCL Elecs. Holdings Ltd.*, No. 2:18-CV-546-JRG, 2020 WL 2098197, at *16 (E.D. Tex. May 1, 2020) (finding that the term "control unit" was not governed by § 112 ¶ 6 because it referred to a "processor, such as a CPU, that controls the performance of apparatus functions" and noting that the claims provided instructions as to how the control unit operated); *SEVEN Networks, LLC v. Apple Inc.*, No. 2:19-CV-115-JRG, 2020 WL 1536152, at *49 (E.D. Tex. Mar. 31, 2020) (finding claim covering "processor configured for: [performing steps]" is not governed by § 112 ¶ 6).

Similarly, § 112 ¶ 6 still does not apply when the claim term as a whole specifies an objective and explains how hardware/software operates within the context of the claimed invention to achieve it. *See, e.g., Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1319–21 (Fed. Cir. 2004) ("circuit [for performing a function]" found to be sufficiently definite structure because the claim recited the "objectives and operations" of the circuit); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1295, 1301 (Fed. Cir. 2014) ("heuristic [for performing a function]" found to be sufficiently definite structure because the patent described the operation and objectives of the heuristic), *overruled on other grounds*, 792 F.3d 1339; *Optis Wireless Tech., LLC v. Apple Inc.*, No. 2:19-CV-00066-JRG, 2020 WL 1692968, at *8 (E.D. Tex. Apr. 7, 2020) ("'Control information extractor' connotes structure; namely, software/hardware in a communication device that includes functionality for configuring transmission information for

the downlink control channel."); *Uniloc USA, Inc. v. Autodesk, Inc.*, No. 2:15-CV-1187-JRG-RSP, 2016 WL 3647977, at *19 (E.D. Tex. July 7, 2016) ("add-on computer software code" found to be structural where claim described how code operated within the claimed invention).

In this case, each of the Huawei patents explain that the inventions are intended for use with known G.709 or G.8032 equipment. *See, e.g.*, Bortz Decl. at ¶¶ 106-12. This equipment includes OTN interfaces that can receive non-OTN signals and generate OTN signals and processors for performing the encoding, decoding, mapping, etc. described in the claims. *See, e.g.*, *id.* at ¶¶ 109-12 For example, '505 claim 3 recites:

> a first unit configured to receive a client signal; [. . .] a second unit configured to determine a quantity of n-bit data units of the client signal based on a clock of the client signal and a local clock; [. . .] wherein the first unit, second unit, third unit, fourth unit, fifth unit and sixth unit are structural entities collectively comprising one or more processors instructed by one or more software programs.

As in *Samsung* and *Zeroclick*, this claim references known computing structure processors and software. *See* Bortz Decl. at ¶¶ 108-09, 111-12. As in *Canon* and *Optis*, the claim recites the objective of each unit and how to achieve that objective. Thus, § 112 ¶ 6 is inapplicable.

This general claim structure is similar to the '236, '433, and '253 patents. Although those claims do not explicitly recite a processor, the specification explains that the patents are designed to use existing OTN (for the '236 and '433 patents) or ethernet protection (for the '253 patent) technology, including hardware known to a POSITA. *See* '236 patent at 2:59-60 ("the present disclosure is directed to a method for transmitting and receiving a client signal in an OTN"); *id.* at 11:60-63 ("Those of ordinary skill in the art should understand that, all or a part of the steps in the method of the embodiment may be realized by relevant hardware instructed by a program, and the program may be stored in a computer readable storage medium."); '433 patent abstract, 4:30-4:40 (explaining that the patent explains how to adapt existing OTN technology to transmit 10GE and 40GE signals); '253 patent at 2:6-10 ("a method, apparatus and system for ring protection are disclosed in an embodiment of the present disclosure to implement ERP in a simple way without changing the existing Ethernet OAM mechanism"); *see also* Bortz Decl. at

¶¶ 106-07, 109-10, 112.

Additionally, with respect to the '253 patent terms, the '253 Patent describes using existing Ethernet OAM's mechanisms for link fault detection and fault alarm messaging while defining novel messages and algorithms for protection actions responding to critical fault conditions. Melendez Decl., ¶ 17. A POSITA would have been familiar with the corresponding "OAM functions and mechanisms for Ethernet based networks" standard (Y.1731 – 05/2006, or "Y.1731") and with Ethernet network hardware, such as nodes (e.g., switches and routers) that include ports, central processors (CPU), packet processors, and memory, for use in Ethernet networks. Id.; Y.1731. Accordingly, A POSITA would have known that Ethernet OAM (Y.1731) functionality could be implemented within such Ethernet network hardware, including by uploading additional or updated software. *See e.g.,* Melendez Decl., ¶¶ 48-54 (with respect to the term "an alarm message processing module").

Moreover, the claims provide specific objectives for each of the claim terms at issue. In *Optis*, the claim at issue recited "control information extractor for configuring transmission information for the downlink control channel via higher layer signaling." The Court explained that this term provided a sufficiently clear objective such that § 112 ¶ 6 did not apply. Similarly, the '433 patent states, e.g., "a decoding subunit configured to decode the N 66B coding blocks to obtain data blocks containing data only and different types of control blocks each of which contains at least one control characters." This process is described in depth in the specification ('433 patent at 12:29-12:65, 14:32-14:60), and a POSITA would understand the structure of this claim term to be software/hardware that includes functionality for decoding the N 66B coding blocks to obtain the data blocks and control blocks. *See* Bortz Decl. at ¶¶ 110, 112. Accordingly, Verizon cannot rebut the presumption that § 112 ¶ 6 does not apply to these claims.[5]

[5] If the Court nonetheless concludes that § 112 ¶ 6 applies, Huawei has identified corresponding structure for each term in the joint claim construction statement.

Dated: November 6, 2020

Respectfully submitted,

/s/ Bradley W. Caldwell
Bradley W. Caldwell
Texas Bar No. 24040630
Email: bcaldwell@caldwellcc.com
Jason D. Cassady
Texas Bar No. 24045625
Email: jcassady@caldwellcc.com
John Austin Curry
Texas Bar No. 24059636
Email: acurry@caldwellcc.com
Justin Nemunaitis
Texas Bar No. 24065815
Email: jnemunaitis@caldwellcc.com
CALDWELL CASSADY CURRY P.C.
2121 N. Pearl St., Suite 1200
Dallas, Texas 75201
Telephone: (214) 888-4848

Gregory P. Love
Texas Bar No. 24013060
greg@lovetrialfirm.com
LOVE LAW FIRM
P.O. Box 948
Henderson, Texas 75653
Telephone: (903) 212-4444

Attorneys for Plaintiff Huawei Technologies Co. Ltd., and Counterclaim Defendants Huawei Technologies USA, Inc., and Futurewei Technologies, Inc.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that counsel of record is being served with a copy of the foregoing document via the Court's electronic filing system on this 6th day of November, 2020.

/s/ Bradley W. Caldwell
Bradley W. Caldwell